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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/987,555	11/15/2001	Masayuki Kimata	Q67299	7542

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EXAMINER	
BAYARD, EMMANUEL	

ART UNIT	PAPER NUMBER
2611	

DATE MAILED: 05/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	09/987,555	KIMATA, MASAYUKI	
	Examiner	Art Unit	
	Emmanuel Bayard	2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *27 January 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1,2,4,8,11,12,14 and 18* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1,2,4,8,11,12,14 and 18* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

This is in response to Notice of Appeal on 1/27/06 in which claims 1, 2, 4, 8, 11-12, 14 and 18 are pending and claims 3, 5-7,9-10, 13, 15-17 and 19-20 are canceled. The applicant's Appeal has been fully considered therefore the finality has been withdrawn and a new ground of rejection is provided below.

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1-2 and 11-12 and are rejected under 35 U.S.C. 102(e) as being anticipated by Mesecher et al U.S. Pub No 2001/0038666 A1.

As per claims 1 and 11, Mesecher et al teaches an adaptive array antenna receiving apparatus, which receives a CDMA, transmitted signal by a plurality of antenna elements (see figs.3-4 elements 48, 50, 52) forming an adaptive array antenna and which includes a plurality of fingers for receiving a multipath signal, said receiving apparatus comprising (see figs.5, 7, 10, 18): a plurality of despreading means (see abstract) forming said plurality of fingers, respectively each of said despreading means being connected to said antenna elements (elements 1-1-N) and supplied with received signals from said antenna elements for despreading the received signals to produce

despread signals (see abstract and page 2, paragraph [0035-0036] and page 3 [0038, 0040]); a plurality of weighting factor multiplying means (see figs. 5, 7, 10, 18 elements 88, 90, 92 412, 414, 416 and page 2 [0035-0037] and page 3 [0038-0045]) also forming said fingers, respectively and supplied with the despread signals from said plurality of despreading means, respectively, each of said weighting factor multiplying means being for multiplying the despread signals by weighting factors calculated for said antenna elements to produce a weighted signal (see figs. 5, 7, 10, 18 elements 88, 90, 92 412, 414, 416 and page 2 [0035-0037] and page 3 [0038-0045]) for a corresponding one of said fingers; an adder is the same as the claimed (combining means) (see figs. 5, 7, 10, 18 elements96, 418, 94 and page 2 [0035-0037] and page 3 [0038-0045]) for adding (combining) the weighted signals supplied from said weighting factor multiplying means to produce a rake combined signal; error signal producing means (see figs. 5, 7, 10, 18 elements 96, 168, 420 and page 2 [0035-0037] and page 3 [0038-0045] and page 4 [0050])) supplied with the rake combined signal and a reference signal for calculating a difference between the rakes combined signal and the reference signal to produce a common error (see fig.10 element 1+j0) signal representative of the difference; and a plurality of adaptive update weight vectors is the same as the claimed (plurality of antenna weight control means) (see figs. 5, 7, 10, 18 elements W11-Wnm, 268, 270, 272 and pag3 [0041]) also forming said fingers respectively and supplied with the de-spread signals from said de-spreading means included in corresponding ones to said, respectively, and with the common error signal in common and connected to said weighting factor multiplying means, each of said predetermined number of control

means being for controlling the weighting factors for each of said weighting factor multiplying means so that a mean square of the common error signal is minimized (see page 2 [0035]) wherein each of said antenna weight control means controls the weighting factors for each of said weighting factor multiplying means by using an N-order, wherein N is greater than or equal to two, correlation (see page 2 [0035] and page4 [0054] matrix as an adaptive update algorithm wherein there are N antenna elements .

As per claims 2 and 12, Mesecher et al teaches a (RLS)(Recursive Least Square) algorithm as an adaptive update algorithm for controlling the weighting factors for each of said predetermined number of weighting factor multiplying means (see page 2 [0035])

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 4, 8, 14 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mesecher et al U.S. Pub No 2001/0038666 A1 in view of Wang et al U.S. Patent No 6,289,062 B1.

As per claims 4 and 14, Mesecher et al teaches all the features of the claimed invention except a deciding means (11) for making a data decision upon the rake combined signal produced by said rake combining means to produce a decision output

signal and switching means (12) for selectively switching the decision output signal produced by said deciding means and the reference signal, said switching means being controlled so that, when the received signal is the pilot signal and when the received signal is a data signal other than the pilot signal, the reference signal and the decision output signal are selected, respectively, to be supplied to said error signal producing means.

Wang et al teaches a detector is functionally equivalent to the claimed (deciding means) (see figs.3, 8 element 44) for making a data decision upon the rake combined signal produced by said rake combining means to produce a decision output signal and switching means (see figs.3, 8 element 47) for selectively switching the decision output signal produced by said deciding means and the reference signal, said switching means being controlled so that, when the received signal is the pilot signal and when the received signal is a data signal other than the pilot signal, the reference signal and the decision output signal are selected, respectively, to be supplied to said error signal producing means (see col.4, lines 1-67).

It would have been obvious to one of ordinary skill in the art to implement the teaching of Wang into Mesecher et al as to produce intermediary digital output in order to clearly define binary output with uniform quantization level as taught by Wang et al (see col.4, lines 43-60).

As per claims 4 and 14, Mesecher et al teaches all the features of the claimed invention except wherein each of said predetermined number L of control means uses

an SMI (Sample Matrix Inversion) algorithm as an adaptive update algorithm for controlling the weighting factors.

Wang et al teach wherein each of said predetermined number L of control means uses an SMI (Sample Matrix Inversion) (see col.2, lines 33-37 and col.6, lines 30-40) algorithm as an adaptive update algorithm for controlling the weighting factors.

It would have been obvious to one of ordinary skill in the art to implement the teaching of Wang into Mesecher et al as to read a whole set of data samples by the weight controller fed by error processor as taught by Wang (see col.6, lines 40-45).

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Maruta et al U.S. Patent No 6,205,166 B1 teaches a CDMA receiver.

Tsujimoto U.S. Patent No 6,075,808 teaches a spread spectrum.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Emmanuel Bayard whose telephone number is 571 272 3016. The examiner can normally be reached on Monday-Friday (7:Am-4:30PM) Alternate Friday off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on 571 272 2988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Emmanuel Bayard
Primary Examiner
Art Unit 2611

5/12/06

EMMANUEL BAYARD
PRIMARY EXAMINER